

REMARKS

The Office Action of June 24, 2005 was received and reviewed. Applicant would like to thank the Examiner for the consideration given to the above-identified application, and for indicating the allowance of claims 17-25.

Claims 1-25 were pending prior to the instant amendment. By this amendment, claims 1, 5, 9 and 13 have been amended, claims 3 and 7 have been cancelled, and new claims 26-29 have been added. Accordingly, claims 1, 2, 4-6 and 8-29 are pending, of which claims 1, 5, 9, 13, 17, 21, 26 and 28 are independent.

Referring to the detailed Office Action, claims 1, 2 and 4 stand rejected under 35 U.S.C. §103(a) as unpatentable over Borel (6,297,093 B1 – hereafter Borel) in view of Assaderaghi et al. (U.S. Patent No. 6,424,011 B1 - hereinafter Assaderaghi). Further, claims 3 and 5-8 stand rejected under 35 U.S.C. §103(a) as unpatentable over Borel and Assaderaghi and further in view of Murai (U.S. Patent No. 5,473,184 – hereafter Murai). Still further, claims 9, 10 and 12 are rejected under 35 U.S.C. §103(a) as unpatentable over Borel, Assaderaghi and Papadas et al. (U.S. Patent No. 5,687,113 - hereinafter Papadas). Finally, claims 11 and 13-16 stand rejected under 35 U.S.C. §103(a) as unpatentable over Borel, Assaderaghi, Murai and Papadas. Reconsideration and withdrawal of the pending rejections are respectfully requested for the reasons provided below.

With respect to the rejection of independent claim 1 over Borel and Assaderaghi and of dependent claim 3 over Borel, Assaderaghi and Murai, Applicant has amended independent claim 1 to add a limitation recited in original claim 3. Particularly, the feature wherein the second impurity is added through the conductive film and the gate insulating film has been added to claim 1. Subsequently, claim 3 has been cancelled, as shown above. Applicant respectfully asserts that Borel fails to teach, disclose or suggest the second impurity in drain and source regions 28 and 29 being added through the conductive film and the gate insulating film (Figs. 2B and 2C). Therefore, if Borel and Assaderaghi were to be combined, Applicant's claimed feature of adding second impurity through the conductive film would still be deficient. Further, there is no motivation or suggestion to combine Borel and Assaderaghi to arrive at Applicant's invention as recited in claim 1.

With respect to the rejection of claim 3, particularly Murai, although Murai discloses adding the second impurity through the silicon dioxide film 5 and the gate oxide film 2,

Murai fails to teach, disclose or suggest adding it through the conductive film (see col. 3, lines 56-60 and FIG. 3).

In contrast with the cited prior art references, amended claim 1, as well as claims 2 and 4, recites a limitation of “wherein the second impurity is added through the conductive film and the gate insulating film”. Accordingly, the films have a protective function against the damage to be caused by the doping process as well as the damage by plasma especially in anisotropic etching to form sidewalls (see page 5, lines 4-18 of the specification). Hence, claims 1, 2 and 4 distinguish over Borel and Assaderaghi.

With respect to the rejection of independent claim 5 over Borel, Assaderaghi and Murai, Applicant has amended independent claim 5 to add a limitation of original claim 7. Specifically, claim 5 now further recites adding a second impurity to the semiconductor film, while using the gate electrode and the sidewall as masks, through the conductive film, the insulating film and the gate insulating film, as shown above. Subsequently, claim 7 has been cancelled. The argument set forth above in relation to Borel in the rejection of claim 1 are also applicable to the rejection of claim 5. Further, as submitted above with reference to the rejection of claim 3, although Murai discloses adding the second impurity through the silicon dioxide film 5 and the gate oxide film 2, Murai fails to teach, disclose or suggest adding it through the conductive film (see col. 3, lines 56-60 and FIG. 3). Still further, Applicant respectfully assert that the motivation or suggestion to combine Borel, Assaderaghi and Murai does not exist. If the reference were to be combined, the feature of adding second impurity through the conductive film would also be deficient, as in claims 1, 2 and 4 discussed above.

Applicant respectfully notes that claims 5, 6 and 8 now further recite a limitation wherein the second impurity is added through the conductive film, the insulating film and the gate insulating film. According to the claimed invention, the films have a protective function against damages caused by the doping process as well as damages caused by plasma especially in anisotropic etching to form sidewalls (see page 5, lines 4-18 of the specification). Accordingly, claims 5, 6 and 8 distinguish over Borel, Assaderaghi and Murai.

With respect to the rejection of claims 9, 10 and 12 over Borel in view of Assaderaghi and Papadas, Applicant has amended independent claim 9 to further recite “removing the

conductive film after removing the sidewall". Support for the amendment can be found at least on page 30, lines 6-9 of the specification and Figs. 9B, 9C and 10A). The Examiner alleged that Borel would be essentially a modification of Papadas given Papadas' disclosure regarding sidewall removal. However, Applicant respectfully asserts that if Borel were applied as a modification of Papadas' disclosure regarding sidewall removal, it is apparent that the sidewall removal process of Borel (in view of Papadas) would be conducted after removal process of conductive film in order to an L-shaped floating gate region 25 and 26 (see col. 2, lines 47-54 and Figs. 2B, 2C of Borel). Therefore, Applicant believes that there is no teaching, disclosure or motivation for combining these references to make the invention of claims 9, 10 and 12.

With respect to the rejection of claim 11 over Borel, Assaderaghi and Papadas, the arguments and amendment set forth above in relation to the rejection of independent claim 9 are also applicable.

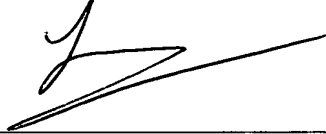
With respect to the rejection of claims 13-16 over Borel, Assaderaghi, Murai and Papadas, Applicant has amended independent claim 13 to further recite "removing the conductive film after removing the sidewall" as shown above. The Examiner reasoned that it would have been obvious to one of ordinary skill in the art to modify Borel by removing the sidewall (as taught by Papadas). However, Applicant respectfully assert that if Borel were applied as a modification to Papadas' disclosure regarding sidewall removal, it is apparent that Borel's removal process of the sidewall would be conducted after removal process of conductive film in order to an L-shaped floating gate region 25 and 26. Therefore, Applicant believes that there is no teaching, disclosure or motivation to combine these references to make the invention of claims 13-16.

The basic requirement for establish a *Prima Facie* case of obviousness is detailed in MPEP § 2143 - 2143.03 (pages 2100-122 - 2100-136). According to the MPEP, first, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine the teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. In view of the deficiencies of the cited prior art references discussed above, the obviousness rejections are improper.

New claims 26-29 have been added to further complete the scope to which Applicant is entitled. Claims 26 and 28 recite the features of original claim 9 and 13, respectively, with an additional feature wherein the sidewall has an insulating property. Support for this feature can be found at least on, e.g., page 21, lines 8-10 of the specification. Claims 27 and 29 recite the feature wherein the conductive film is removed after the removing the sidewall, as supported on page 30, lines 6-9 of the specification and Figs. 9B, 9C and 10A, for example.

In view of the foregoing, it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 1, 2, 4-6 and 8-16 be allowed, that new claims 26-29 be allowed and that the application be passed to issue. If a conference would expedite prosecution of the instant application, the Examiner is hereby invited to telephone the undersigned to arrange such a conference.

Respectfully submitted,



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